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EXAMINER

COLLINS, GIOVANNA M

ART UNIT PAPER NUMBER

3672

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/604,515	Applicant(s) JEE ET AL.	
	Examiner Giovanna M. Collins	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040108, 20031222</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the coiled tubing must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 9,10,12,13, and 15 are objected to because of the following informalities:

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In claim 9, line 2, the phrase “the distributed temperature sensors are based on and array” is unclear.

Claim 10 recites the limitation "the treated zones" in line 2. There is insufficient antecedent basis for this limitation in the claim as this limitation not been previously recited.

In claims 12 and 13, the phrase “ The method according to claim 9” should be changed to - - The method according to claim 11 - -.

Claim 13 recites the limitation "the coiled tubing injection point" in line 2. There is insufficient antecedent basis for this limitation in the claim as this limitation not been previously recited.

In claim 15, the phrase “ The method according to claim 1” should be changed to - - The method according to claim 14 - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1-3,7,8,11,19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Tubel et al. 6,281,489

Tubel discloses a method for treating formations comprising providing distributed temperature sensors, injection a treatment fluid and monitoring the temperature across the treatment interval during the injection process (col. 4, lines 51-67).

Referring to claim 2, Tubel discloses a coiled tubing (col. 7, lines 32-34)

Referring to 3, Tubel discloses monitoring temperature after the injection process (col. 15, lines 20-35)).

Referring to claims 7 and 19-20, Tubel discloses monitoring the pressure across the treatment interval, and measuring bottom hole pressure with distributed sensors (col. 4, lines 5-67).

Referring to claim 8, Tubel disclose the temperature sensors are an optical fiber (col. 4, lines 51-67).

Referring to claim 11, Tubel discloses adjusting the treatment in real time (col. 15, lines 50-57).

5. Claims 1-5,7,8,10,11,16,19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Wetzel et al. 6,789,621.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

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inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Wetzel discloses a method for treating formations comprising providing distributed temperature sensors, injection a treatment fluid and monitoring the temperature across the treatment interval during the injection process (col. 9, line 35-col. 10, line 36).

Referring to claim 2, Wetzel discloses a coiled tubing (col. 2, lines 53-55)

Referring to 3, Wetzel discloses monitoring temperature after the injection process (col. 9, line 35-col. 10, line 36).

Referring to claims 4-5, Wetzel discloses determining a baseline temperature profile before starting the injection of the treatment fluid (col. 9, lines 45-47).

Referring to claims 7 and 19-20, Wetzel discloses monitoring the pressure across the treatment interval, and measuring bottom hole pressure with distributed sensors (col. 4, lines 5-7).

Referring to claim 8, Wetzel disclose the temperature sensors are an optical fiber (col. 4, lines 5-7).

Referring to claim 10, Wetzel discloses determining the location of the treated zone (col. 10, lines 14-20).

Referring to claim 11, Wetzel discloses adjusting the treatment in real time (col. 9, lines 59-60).

Referring to claim 16, Wetzel discloses the treatment is gravel packing (col. 9, lines 35-52)

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6. Claims 1,3,7,8,10,19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Temperature Logging by the Distributed Temperature Sensing Technique during Injection Tests by Sakaguchi et al.

Sakaguchi discloses a method for treating formations comprising providing distributed temperature sensors, injection a treatment fluid and monitoring the temperature across the treatment interval during the injection process (page 1657 under the Abstract).

Referring to 3, Sakaguchi discloses monitoring temperature after the injection process (page 1658, under Heading 4.1, paragraph 3).

Referring to claims 7 and 19-20, Sakaguchi discloses monitoring the pressure across the treatment interval, and measuring bottom hole pressure with distributed sensors (page 1658, paragraph 1).

Referring to claim 8, Sakaguchi disclose the temperature sensors are an optical fiber (Abstract).

Referring to claim 10, Sakaguchi discloses determining the actual location of the treatment zone (page 1658, under Heading 4.1, paragraph 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8.

9. Claims 1,5,6,11,12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guinn et al. RE 27,459 in view of Temperature Logging by the Distributed Temperature Sensing Technique during Injection Tests by Sakaguchi et al.

Referring to claims 1 and 17, Guinn discloses a method for treating formations comprising injecting a treatment fluid to perform acid fracturing (col. 3, line 55) and monitoring the temperature across the treatment interval during the injection process (col. 3, line 31-col. 4, line 11). Guinn does disclose a temperature logging system but does not disclose the system is a distributed temperature sensor. Sakaguchi teaches a distributed temperature sensor logging system can locate fracture locations more clearly and easily than convention temperature logging systems (under abstract paragraph labeled 1). As it would be advantageous to more easily locate fractures, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Guinn to have the distributed temperature sensor as taught by Sakaguchi.

Referring to claim 5, Guinn discloses determining a baseline temperature profile (col. 3, lines 31-32).

Referring to claim 6, Guinn discloses injecting a non-reacting fluid before the step of injecting the treatment fluid to calculate a differential temperature profile (col. 6, lines 25-29).

Referring to claim 11, Guinn discloses adjusting the treatment (col. 4, lines 30-53).

Referring to claim 12, as best understood by examiner, Guinn discloses adding a diverter (col. 4, lines 30-53).

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10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel '489.

Referring to claim 13, as best understood by the examiner, Tubel discloses method of claim 1 and adjusting the treatment fluid to in real time but does not disclose changing the position of the coiled tubing injection point. Tubel does disclose the manner of the treatment fluid can be changed. As it would be advantageous to change the injection point to avoid some obstruction which is preventing the chemical from reaching the correct zone, it would be obvious to one of ordinary skill in the art to modify the method disclosed by Tubel to change the injection point.

11. Claims 12,14-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel '489 in view of Foam as a Diverting Technique for Matrix Sandstone Stimulation by Burman et al.

Referring to claim 12, as best understood by the examiner, Tubel discloses method of claim 1 and adjusting the treatment fluid to in real time but does not disclose adding a diverter or adjusting the amount of added diverter. Burman teaches diverters are added to treatment fluids to promote flow over an entire interval (page 1, under Introduction, paragraph 4). As it would be advantageous to ensure the treatment fluid travel over an entire treatment area, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Tubel to add a diverter as taught by Burman.

Referring to claims 14-15, Tubel discloses adding a chemical treatment but does not disclose the treatment is a matrix acid treatment. Burman teaches a matrix acid treatment removes damaging silicates (page 1, under Introduction, paragraph 3). As it would be

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advantageous to remove damaging silicates, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Tubel to have a matrix acid treatment as disclosed by Burman.

Referring to claim 18, Tubel does not disclose here the injection treatment consists in a plurality of stages of injection of alternating treatment fluids and wherein at least some stages of the treatment consist in injecting a foam. Burman teaches a plurality of alternating treatment fluid with stages of injecting a foam (page, 2 paragraph 1). Burman teaches this treatment helps to promote flow of a treatment over an entire interval (page, 2 paragraph 1, and (page 1, under Introduction, paragraph 4).

12. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Temperature Logging by the Distributed Temperature Sensing Technique during Injection Tests by Sakaguchi et al. in view of Didden et al. 6,271,766.

Sakaguchi disclose method of claim 1 but does not disclose the sensor is a Fiber Bragg Grating temperature sensor. Didden teaches it is well known in the art to use a Fiber Bragg Grating sensor as a distributed temperature sensor (col. 3, lines 67). As one of ordinary skill in the art would be familiar with the use of a Fiber Bragg Grating sensor as a distributed temperature sensor, it would be obvious to modify the method disclosed by Sakaguchi to have a Fiber Bragg Grating sensor as taught by Didden.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 703-306-5707. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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